

REMARKS/ARGUMENTS

Claims 7-13 to 15-17 are pending. Claims 7, 14, 16 and 38 have been amended.

§ 102 Rejections

Claims 7-9, 13-17 and 32, 33, 37-40 are rejected under 35 USC § 102(e) as being anticipated by Teslenko et al. (U.S. Patent No. 6,333,399). Applicants disagree.

Chitosan from fungal sources (fungal chitosan) is not the same as chitosan from shellfish sources (shellfish chitosan) because chitosan from shellfish does not contain glucans which are known to bond to the chitosan and make it difficult to separate (see attached declaration from Dr. Fosdick).

In light of the above, Applicants have added the text “wherein a 1% solution of the chitosan containing material has a turbidity of less than 20 NTUs.” Support for this amendment, and the amendment to claims 14 and 38, can be found on page 14 of the specification and original claim 14. The degree of turbidity is known to correlate to the level of glucans present in the sample. As shown in the data provided by Applicant’s expert Dr. Fosdick, turbidity can be used to characterize the amount glucans present in a fungal chitosan composition. At less than 20 NTUs (nephelometric turbidity units) the amount of glucans is less than 2% (see Table 1 in the attached declaration).

The Examiner has cited Teslenko et al. as anticipating Applicant’s claims to a fungal chitosan. However, Teslenko et al. teaches and claims a chitosan/glucan complex that is distinct from the presently claimed composition. More specifically, the Examiner has identified Example 1, in the Teslenko et al. reference as anticipating Applicant’s invention, however, Applicant’s note that the product produced by the methods of Example 1 is a chitosan/glucan complex. This is both admitted by Teslenko et al. in the text of Example 1, as well as shown in the data that corresponds to Example 1 which is shown in Table 3. Table 3, sample No. 1, shows that the product made is only 10% soluble in acid, which indicates that a substantial portion of the remaining solids are glucans (chitosan is acid soluble but the glucan fraction is not).

Applicants assert that given the above the Examiner should withdraw the 102(e) rejection against claims 7-9, 13-17 and 32, 33, 37-40.

§ 103 Rejections

The Examiner rejected claims 7-40 stand rejected under 35 USC § 103(a) as being unpatentable over Tsugita et al (4,983,304) in view of Hersberger (4,806,474) and Teslenko et al. (6,333,399). Applicants disagree.

The presently pending claims are directed to chitosan that is derived from fungus NOT shellfish. This is an important difference because Applicant's product can be used by those that have allergies to shellfish.

The presently pending claims are also directed to chitosan that is both highly deacetylated and substantially free of glucans. Thus, providing a fungally derived chitosan that has increased functionality (i.e. because of high deacylation and low viscosity) and is substantially free of the bound glucans. This product is both novel and non-obvious over the art cited for the following reasons:

Tsugita et al. teaches a shell fish derived chitosan which potentially contains shellfish antigens and does not have glucans. Tsugita et al. mentions fungus as a potential source of chitosan but does not provide any teaching as to how to both remove glucans and obtain high deacetylation levels at the same time. The additionally sighted references fail to make up for the deficiencies of Tsugita.

As stated above Teslenko et al. teaches a chitosan/glucan complex. This is distinct compared to the claimed subject matter and Teslenko et al. does not teach how to alter the complex to achieve applicant's invention. Moreover, the additional references cited to not make up for the deficiencies of Teslenko et al.

Hersberger teaches a chitosan that is NOT highly deacetylated and also contains glucans (see Table 1 showing chitosan which is only about 80% deacetylation and contains over 3% glucans). There is no additional teaching as to how to both remove the glucans and achieve high deacetylation levels. Moreover, the additional references cited to not make up for the deficiencies of Hersberger.

In light of the above, the rejection of claims 7 and 16 under 35 USC § 103(a) as being unpatentable over has been overcome and should be withdrawn. Moreover, each of the dependent claims add additional features to claims 7 and 16. Thus, the remaining dependent claims are likewise patentable.

It is submitted that the Present Application is in a condition for allowance. On entry of this Reply and Amendment, claims 7-17, and 32-40 will be pending in the Present Application. The Applicants respectfully request reconsideration and allowance of all pending Claims.

The Examiner is invited to telephone the undersigned if such would advance the prosecution of the Application.

Please charge any fees due, or credit any overpayment to Deposit Account No. 50-2342.

Respectfully submitted,

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